SETTING AN AGENDA FOR NEUROMUSICAL RESEARCH

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Article:

Why do we human beings have such powerful emotional responses to music? How do composers, conductors, and other musicians think in sound? What happens when a pianist suddenly loses control over his hands and can no longer perform? These and a myriad of similar questions have led to a more general question: How does music "work" in the brain?

Our understanding of the phenomenon of music as it relates to brain functions has been hampered by a number of factors. Two of the most important obstacles have been a lack of research focus, as evidenced by a very diffuse data base; and a lack of communication and sharing among those who know neuroscience and those who know music.

Recently, an attempt to begin addressing these deficiencies was initiated in March 1993, when the Institute for Music Research at the University of Texas at San Antonio sponsored a research symposium entitled "Setting an Agenda for Neuromusical Research." This conference marked the beginning of an ongoing effort to map out a blueprint for future neuromusical research. Defined as the study of the interrelationships among music, the brain, feelings, and behavior, neuromusical research has implications for the fields of music medicine, music therapy, and music psychology. In addition, it has implications for the field of neuroscience as researchers use music to discover new understandings about the workings of the brain.

Participants in the conference included eight neuroscientists and six musicians. (A complete roster is given at the end of this article.) These 14 experts spent three days in a retreat-like setting discussing theory and philosophy of neuromusical research, and affective, cognitive, psychomotor, applied/clinical, and interdisciplinary education issues, The discussions were lively and often somewhat passionate, Interested eavesdroppers might have been surprised, and perhaps pleased, to have heard frequent references to the wonder and beauty of music. These scholars were engaged in an effort to explicate some of music's deepest mysteries, but they were clearly awestruck by the immense power of music to influence human thought and feeling.

Generally, the discussions led to the consensus that a sustained, systematic approach to neuromusical research may lead to:

1. A better understanding of, and appreciation for, the role music plays in the lives of all human beings;

2. Greater recognition that music, more than being just a pleasant diversion, has a significant impact on human physiology (e.g., heart rate, brain waves, or blood chemistry), and psychology (e.g., enhancing or creating emotional responses such as joy, grief, and love);

3. An awareness that music in certain circumstances and in combination with other factors (e.g., personality types, presence of drugs, and peer influences), can have significant effects, positive or negative, on human behavior;

4. Increased effectiveness in educating people musically;

5. Increased effectiveness in preparing performing musicians and in dealing with performance-related injuries;

6. Better use of music in enabling disabled individuals to have a higher quality of life;

7. Wider use of music in medical/clinical conditions as disparate as childbirth, brain-injury, or chronic pain.

The overriding goal of neuromusical research is to better understand the phenomenon of music and to use this knowledge for the betterment of all humankind.

Members of this neuromusical research team will make a presentation at the Fifth International Music-Medicine Symposium on Music, Physiology, and Medicine. This conference of the International Society for Music in Medicine is co-sponsored by the Sportkrankenhaus (Sports Hospital) Hellersen, Lüdenscheid, Germany; the Institute for Music Research at the University of Texas at San Antonio; and the International Arts Medicine Association, Philadelphia, Pennsylvania. Paper presentations, workshops, and research poster sessions on a wide variety of topics will be given 17-19 March 1994 in San Antonio.

It would be presumptuous to assume that three days of discussion provided immediate solutions to critical problems. Nevertheless, we have begun the process of sharing among neuroscientists and musicians, and several collaborative research efforts have been set in motion. As members of the research team continue to interact with one another and with others who are interested in this topic, this burgeoning field should take on a more definitive profile.

Neuromusical Research Conference

Roster of Participants

Dale L. Bartlett, PhD. Professor of Music Therapy, Michigan State University.
Manfred Clynes, DSc. Independent neuroscientist, Sonoma, California.
Charles T. Eagle, RMT-BC, PhD. Head, Department of Music Therapy: Medicine & Health, Southern Methodist University. Peter T. Fox, MD, Director, Research Imaging Center, University of Texas Health Science Center at San Antonio.
Norman Goldberg, President, MMB Music, Inc., St. Louis, Missouri.
Donald A. Hodges, PhD. Director, Institute for Music Research, University of Texas, San Antonio.
Terry M. Mikiten, PhD. Associate Dean, Graduate School of Biomedical Sciences, University of Texas Health Science Center at San Antonio. George P. Moore, PhD. Independent biomedical engineer, Petaluma, California.
Karl H. Pribram, MD. Center for Brain Research and Information Sciences (B.R.A.I.N.S..) Radford University, Radford, Virginia. Joseph P. Scartelli, RMT-BC, PhD, Dean, College of Visual and Performing Arts, Radford University, Radford, Virginia.
Ralph Spintge, Dr. med., Head Neurovegetative Pain and Music Medicine Research Lab at Sportkrankenhaus Hellersen, Lüdenscheid,
Germany.
Joe Steussy, PhD. Director, Division of Music, University of Texas at San Antonio.
Frank R. Wilson, MD. Associate Clinical Professor of Neurology, University of California, San Francisco.
Matthew Wiuen, PhD. Associate Director, Center for High Performance Computing, The University of Texas System.

Research Team Assistants:

Julene Johnson, Doctoral candidate in cognitive neuroscience, University of Texas at Dallas. Carlos Velez. Pre-med student, University of Texas at San Antonio.

Figure 1. Neuromusical Research Team. Institute for Music Research, University of Texas at San Antonio, January 21-23, 1993.
Back row: Charles Eagle, Dale Bartlett, Joe Scartelli, Frank Wilson, Joe Stuessy, Karl Pribram, Manfred Clynes and Norman Goldberg.
Front row: George Moore, Don Hodges, Matthew Witten, Terry Mikiten, Ralph Spintge, Julene Johnson and Carlos Velez. Not pictured: Peter Fox.